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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/038,223 | 10/23/2001 | John William Short | 17MY-7138 | 8622 |

27127 7590 08/20/2003

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| EXAMINER |
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YEE, DEBORAH

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| ART UNIT | PAPER NUMBER |
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1742

DATE MAILED: 08/20/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/038,223

Applicant(s)

SHORT, JOHN WILLIAM

Examiner

Deborah Y e

Art Unit

1742

-- Th MAILING DATE of this communication app ars on the cov r she t with the correspondenc address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 to 20 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 9 is/are allowed.
- 6) ☒ Claim(s) 1-7, 19 an 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s) _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1 to 9 , 19 and 20 have been considered but are moot in view of the new ground(s) of rejection.

Specification

The disclosure is objected to because of the following informalities: Last 4 lines of paragraph 25 on page 13 discloses that alloys C1, C5 and C6 are within the accepted ranges for the Custom 450 alloy as disclosed in US Patent 3,574,601. This appears to be incorrect because C1, C5 and C6 contain Nb (same as Cb) at more than 10x%C yet claim 1 of US Patent '601 recites Nb to be present at up to 10x %C.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 to 7, and 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the publications of Carpenter Custom 450 , Henthorne, or Bridge et al. , which were submitted by applicant.

Carpenter Custom 450 publication on page 1 discloses the type analysis 450 steel having a composition with alloying constituents whose wt% ranges overlap those

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recited by the claims; such overlap renders applicant's composition prima facie obvious despite differences in non-overlapping areas, see *In re Malagari*, 182USPQ549 and MPEP2144.05. To distinguish claims over prior art, applicant needs to demonstrate (e.g. by comparative test data that the more narrowly claimed ranges are somehow critical and productive of new and unexpected results. Also note on page 6 wherein given the right conditions, the Custom 450 alloy can possess a tensile strength of greater than 1200Mpa.

Henthorne discloses specific heat nos. 1,3 and 4 representative of the custom 450 steel in Table 1 on page 53/14 which meet the claimed composition except for the uncertainty of the Nb content. Note that the Henthorne publication copy submitted by applicant has been poorly copied and the Nb contents aren't shown. It would be greatly appreciate if applicant could provide another copy of Table 1 to provide clarity with regard to the Nb amounts. In any event, the prior art Nb range is present in an amount of at least 8x%C as evident by the Carpenter 450 publication; and hence would encompass applicant's claimed Nb range of (10 to 20) x %C.

Bridge et al. In Table 1 on page 280 disclose a 450 steel alloy composition which meets the claimed composition except for a slightly higher amount of Nb (Cb). Since applicant has not demonstrated criticality of the Nb range (e.g. by comparative test data), then it would seem that a composition with 0.64% Nb vs. a composition with slightly more (say 0.68%) would depict a mere difference in the proportion of element without any attendant unexpected results, which would not patentably distinguish claims over prior art. Moreover, note tables II and III on page 280 and 281 wherein depending

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on the specific age hardening treatment, the 450 steel can obtain a tensile strength of 175Ksi(1200Mpa) or more and fracture energy of 60 to 102 ft-lbs.

In regard to applicant's specification in Table 3 on page 12, the comparative test alloys C1, C5 and C6 contain lower amounts of C than the prior art alloys and hence would not be a valid comparison to distinguish claims over prior art.

Even though prior art does not disclose a grain size of ASTM #5 or higher as recited by the claim 6, such would be expected since compositional limitations are met and in absence of proof to the contrary.

Moreover, the prior art discloses a steel having a martensite microstructure and therefore contains no delta ferrite and hence would satisfy claim 19.

Allowable Subject Matter

Claims 8 and 9 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The art of record does not teach or fairly suggest a steam turbine component formed of a precipitation-hardened stainless steel alloy composition, as claimed, having an ultimate tensile strength of at least 1275MPa together with a Charpy impact toughness of at least 80 Joules, and has been tempered at a temperature of about 480 to 500C.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 703-308-1102. The examiner can normally be reached on Monday-Friday from 6:30 to 4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 703-308-1146. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

dy


DEBORAH YEE
PRIMARY EXAMINER